

# **APPARATUS FOR MULTIPLEXING SIGNALS THROUGH I/O PINS**

## **ABSTRACT**

One embodiment of the present invention provides an apparatus that selectively multiplexes a plurality of signal lines through an I/O pin on a semiconductor chip. This apparatus includes an I/O pin, for coupling a signal line within the semiconductor chip to a signal line outside of the semiconductor chip. A transmitting circuit is configured to selectively multiplex the plurality of signal lines onto the I/O pin. A receiving circuit is configured to receive multiplexed data from the I/O pin, and to reverse the multiplexing so that values originally from the multiplexed signal lines are separated into distinct signals in the receiving circuit. Note that the transmitting circuit and the receiving circuit are driven by a common clock signal. The apparatus additionally includes an initialization circuit that selectively configures the transmitting circuit and the receiving circuit to multiplex at least one of the plurality of signal lines through the I/O pin.